



MARYLAND FIRE AND RESCUE INSTITUTE • UNIVERSITY OF MARYLAND

Emergency Vehicle Operator

Lesson 4-2: Vehicle Pre-Trip Inspection



Student Performance Objective

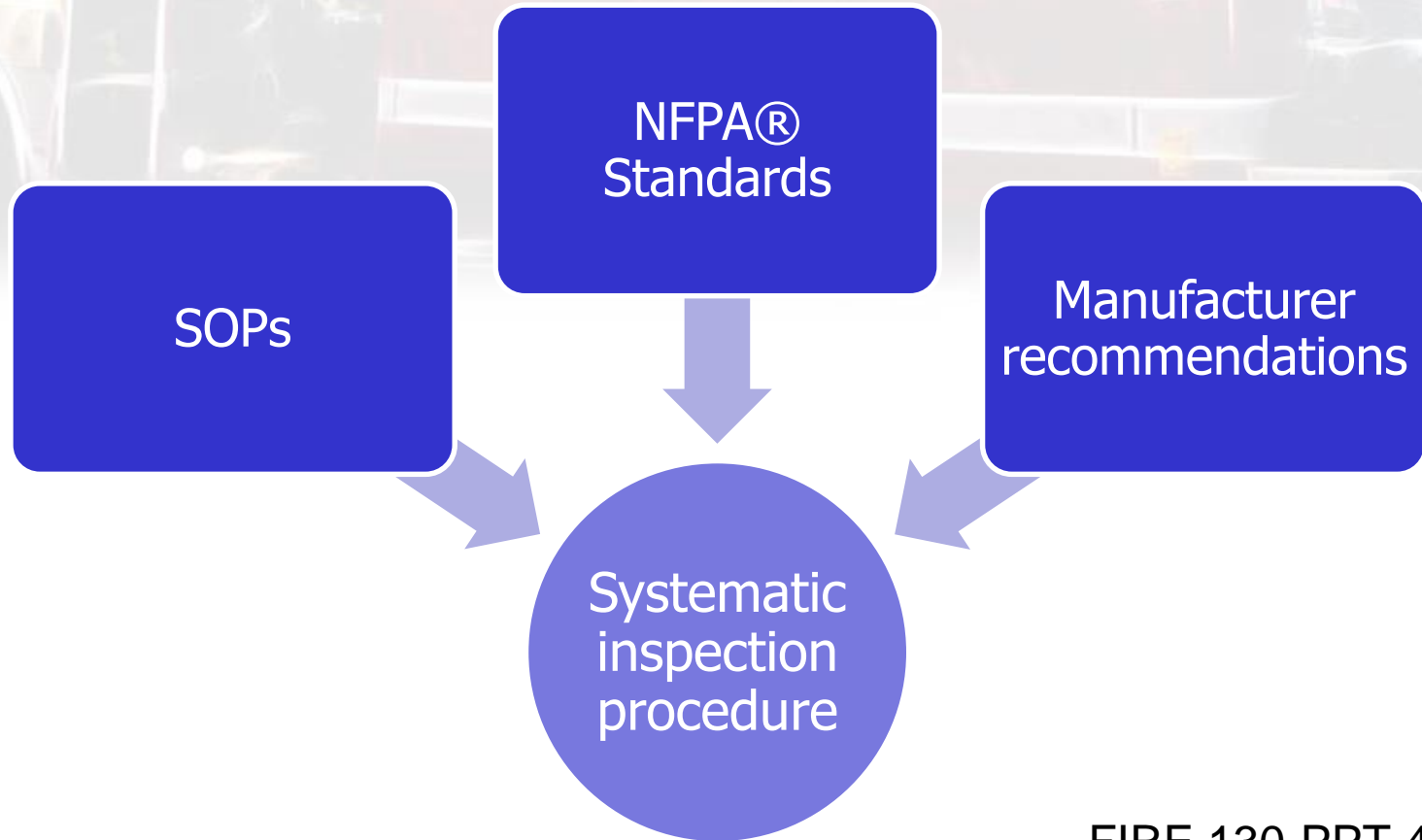
- After completing this lesson, the student shall be able to explain actions taken to appropriately conduct apparatus inspection and maintenance. In addition, students will be able to perform basic apparatus inspection and maintenance skills.

Overview

- Apparatus Walk Around Maintenance Inspection
- Interior Inspection
- Brake Inspection and Tests
- Engine Compartment Inspection and Routine Preventive Maintenance
- Vehicle Batteries
- General Fire Suppression Equipment Maintenance

Apparatus Walk Around Maintenance Inspection

- A systematic approach to apparatus inspection helps ensure that all required items are checked.



Apparatus Walk Around Maintenance Inspection

- Operational readiness and pretrip road worthiness inspections are both conducted during a walk-around inspection.
- NOTE: The driver/operator is responsible for following all jurisdictional laws, codes, and policies.



Apparatus Walk Around Maintenance Inspection

- Observe the following when approaching a vehicle for inspections.

Make observations about body damage, leaks, or other visibly apparent issues

Observe terrain on which vehicle is parked

Make sure indoor inspection areas are well ventilated

Park vehicles outside for functional tests if weather permits

Chock the wheels of a parked apparatus

Apparatus Walk Around Maintenance Inspection

- CAUTION
 - Diesel exhaust may contain up to 100 harmful chemicals and compounds. Do not run these engines in unvented areas for any period of time.

Apparatus Walk Around Maintenance Inspection

- Driver/operators should conduct a visual inspection of the apparatus on both sides of the vehicle.

Condition

Cleanliness

Damage

Defects

Functionality

Leaks

Apparatus Walk Around Maintenance Inspection

- Driver/operators should inspect vehicle tires and ensure that they are the correct type for the apparatus.

Tread depth
and
separation

Cupping

Excessive
wear on
sidewalls

Cuts

Dry rotting

Cracks

Objects
impaled in
the tire



Interior Inspection

- Once the exterior examination is finished, driver/operators may inspect the interior of the cab.

Adjust mirrors

Adjust seats and seat belts

Start engine

Check dashboard instruments

Check miscellaneous equipment stored in the cab



Interior Inspection

- Newer apparatus may be equipped with an electrical load management system.

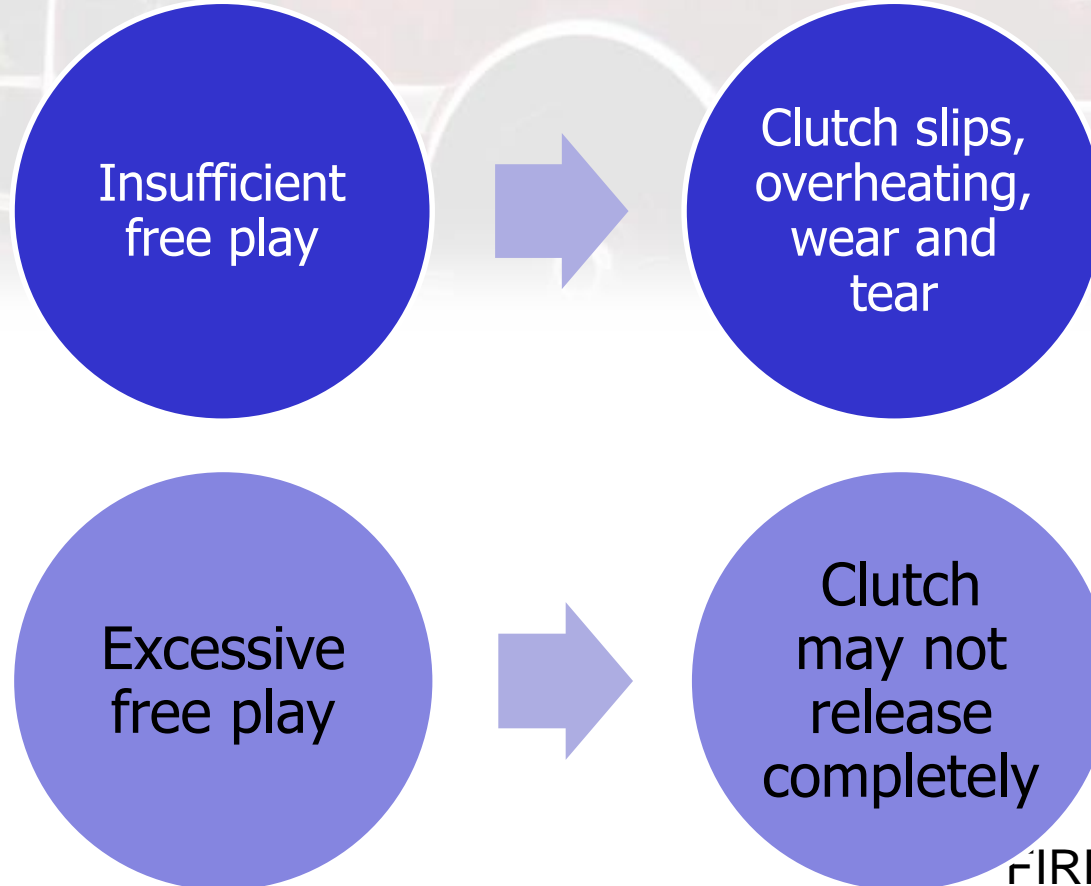
Load
Sequencer



Load
Monitor

Interior Inspection

- The adjustment of the clutch pedal should be checked in apparatus with a manual transmission.



Interior Inspection

- Driver/operators should inspect the steering system for proper adjustment and reaction.

Steering wheel play should be no more than 10 degrees in either direction



Interior Inspection

- Be familiar with GVWR placards and how to maintain vehicles accordingly.

GVWR is determined by manufacturer

GVWR indicates maximum weight and tire pressure recommendation

Load apparatus, then compare with GVWR

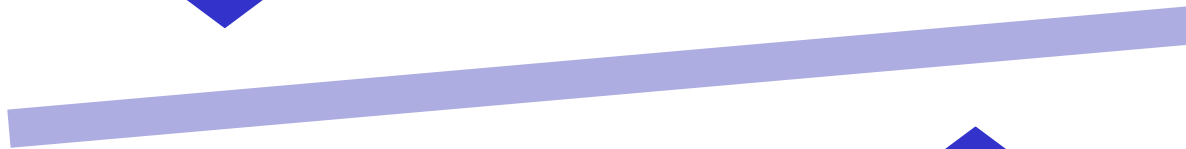
Know if your vehicle is “overgrossed”

Interior Inspection

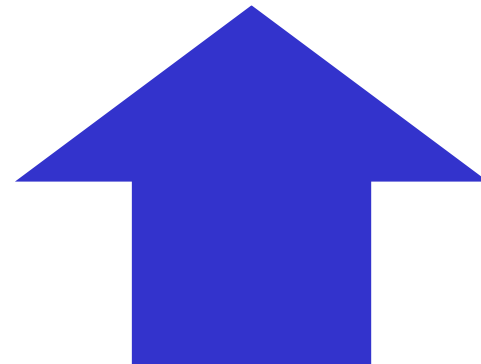
- Many jurisdictions store fire and rescue equipment in the front or rear of the cab.



Not required to
determine road
worthiness

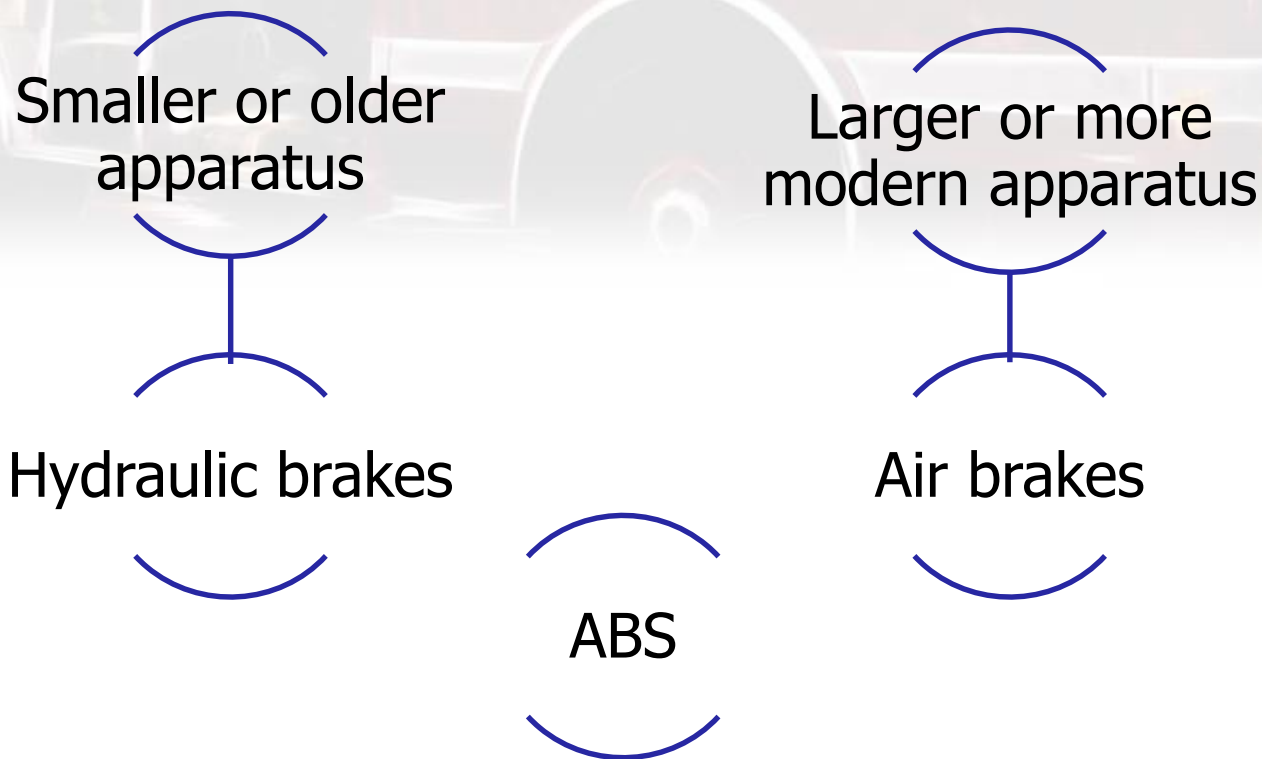


Vital to maintain
readiness for
emergency
incidents



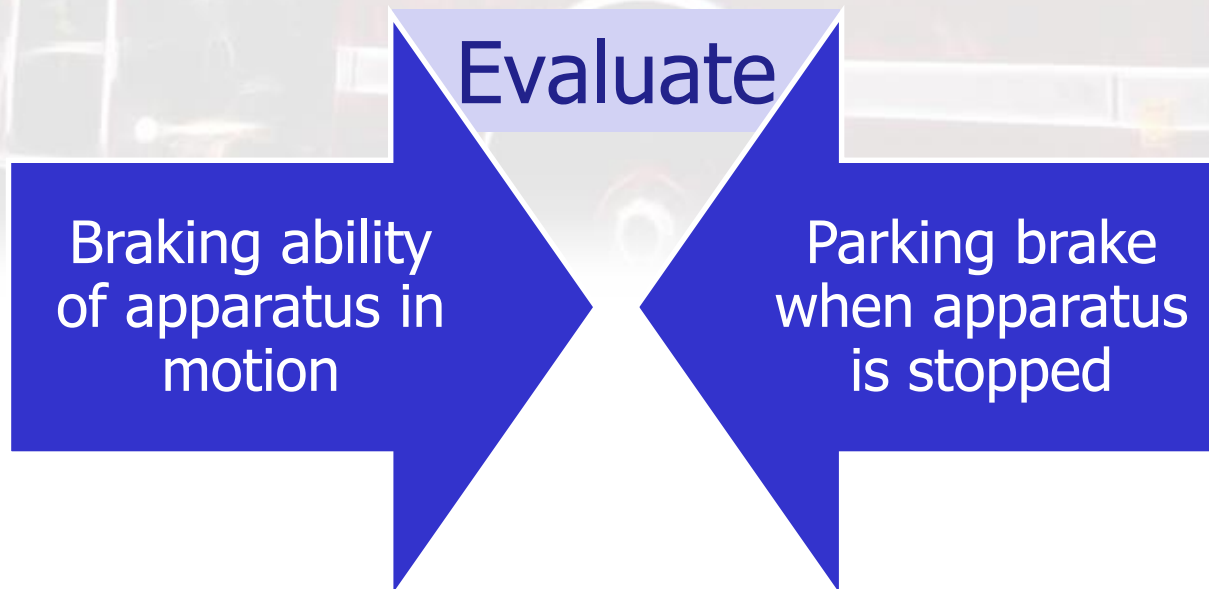
Brake Inspection and Tests

- Pumpers may be equipped with different braking systems depending on size and age of the apparatus.



Brake Inspection and Tests

- Apparatus brakes should be thoroughly tested at least annually.



Engine Compartment Inspection and Routine Preventive Maintenance

- Engine compartment checks and maintenance should only be performed with the engine shut off.



Inspect engine compartment according to SOPs

- Fluid levels
- Tilt cab controls
- Cab latches

Engine Compartment Inspection and Routine Preventive Maintenance

- CAUTION

- Before lifting the cab, be sure that there is adequate vertical clearance and secure all loose equipment in the cab.
- Many tilt cabs have inspection doors that allow a check of engine oil, coolant, and other fluids. However, the cab should still be lifted on a weekly basis for a thorough inspection of the engine compartment.

Engine Compartment Inspection and Routine Preventive Maintenance

- Newer apparatus may be equipped with systems for cleaner emissions from diesel engines.

DPF

SCR

Periodically inspect the exhaust system

- Cracks or leaks
- Exhaust pipe and insulation
- Joints and flex pipes

Engine Compartment Inspection and Routine Preventive Maintenance

- Proper chassis lubrication may help prevent costly repairs and reduce out-of-service time.

Effective lubrication depends on

- Use of proper grade lubricant
- Frequency of lubrication
- Amount used
- Method of lubrication

To select the proper lubricant, consider

- Requirements of the unit
- Characteristics of the lubricant
- Manufacturer's recommendations

Oil selection

- Consult operator's manual for oil type and location of fill ports and grease fittings

Engine Compartment Inspection and Routine Preventive Maintenance

- CAUTION
 - Use the proper oil for the engine as per manufacturer's recommendation. Failure to use the proper engine oil can lead to costly engine and emission system damage.

Engine Compartment Inspection and Routine Preventive Maintenance

- If chassis lubrication is the responsibility of the driver/operator, take the following steps.

Chassis lubrication

- Be familiar with all fill points
- Wipe fitting clean with a shop rag
- Press end of lubrication gun fill hose onto fitting
- Operate pump handle until resistance is felt
- Continue until all points have been filled

Vehicle Batteries

- Most modern truck batteries are maintenance free, but older apparatus may need more care.



Battery care

- Check cable connections
- Add distilled water to older apparatus batteries, if required
- Keep clean
- Check for cracks or leaks
- Charge or jump-start if necessary

Vehicle Batteries

- **WARNING:** Batteries give off explosive hydrogen gas. Ventilate area when servicing. Wear safety goggles and acid resistant gloves. Exploding batteries can injure or kill.

Vehicle Batteries

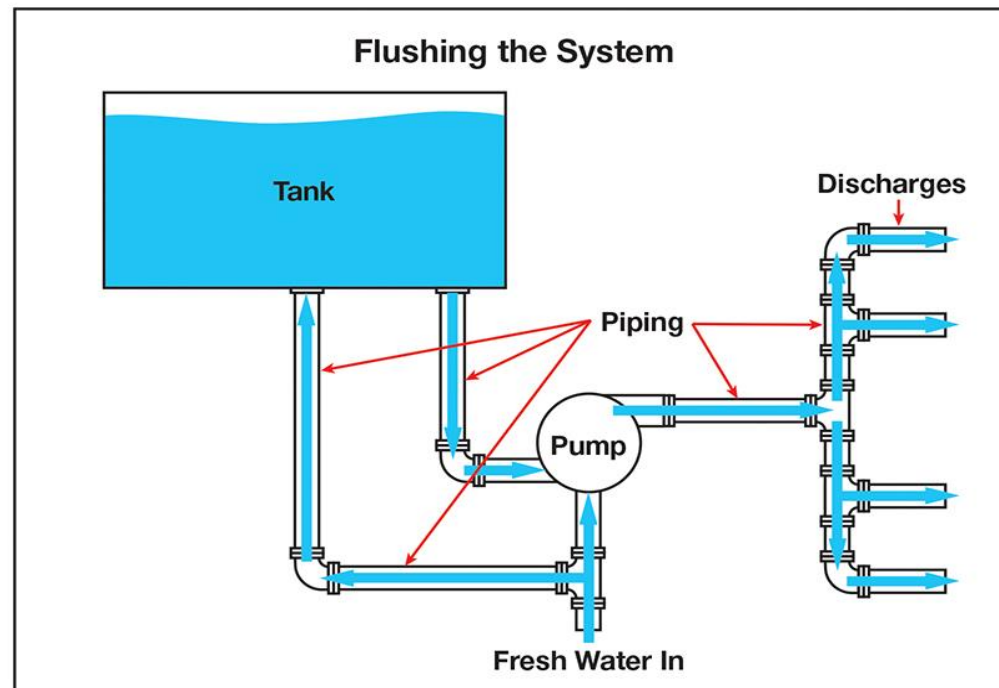
- It is prudent to perform some inspections after the apparatus has been operated for an extended period of time.

At a fire or emergency scene

After a long road trip

General Fire Suppression Equipment Maintenance

- Fire pumps are checked at regular intervals and inspected to detect deficiencies or failure.



Some checks are done on an as-needed basis

Student Performance Objective

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Review

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